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FUJIFILM ELECTRONIC IMAGING LTD.

MULTI-LASER B1 IMAGESETTER **LUXEL F-9000**

AEVOLVING THE IMAGE

INPUT OUTPUT WORKFLOW

FUJIFILM - A NAME TO BE TRUSTED

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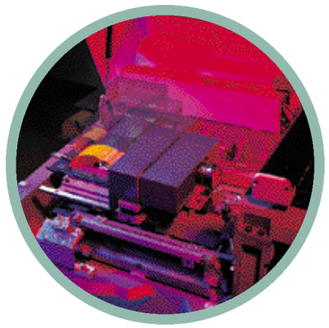
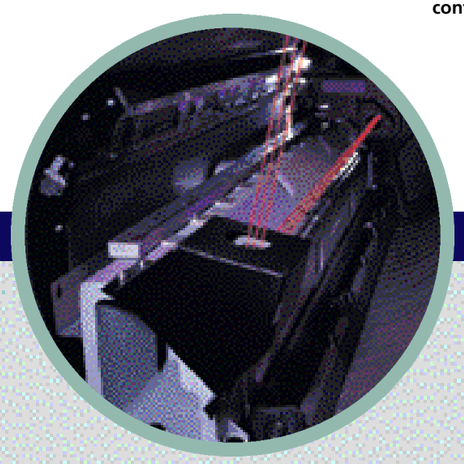


Fujifilm Electronic Imaging

Fujifilm Electronic Imaging is a leading manufacturer and supplier of equipment and systems to the graphic arts, pre-press and printing industries world-wide. We are a full subsidiary of Fuji Photo Film of Japan, one of the world's foremost imaging and information products groups.

Fujifilm Electronic Imaging's rapid growth reflects our drive to deliver 'best of class' products: the award-winning C-550 Lanovia scanner and the technologically ground-breaking Luxel family of imagesetters and platesetters are recent examples of FFEI's commitment to this goal.

Aiming to be the best does not end once we have built a product. Quality is key to the performance and productivity of our products in use, and it underpins our extensive support and service infrastructure, ensuring that our customers continue to benefit from their investment in every Fujifilm product.



LUXEL F-9000

Staying ahead in a changing industry

The graphic arts industry is witnessing unprecedented change. The role of pre-press in the path from design to print has become ill-defined as the industry rapidly advances towards an all-digital workflow. And as origination costs have fallen, there has been an expansion in demand for quality reproduction and printing. The accelerating pace of business worldwide, coupled with a growing customer awareness of the capabilities of new technology, has lead to demands for ever-shorter turnaround times, with no compromise on quality or escalation in cost.

As part of a group that spends £1 million every day on research and development, it is not surprising then to learn that we have developed the fastest and most technically advanced multi-laser imagesetter to meet – and indeed anticipate – the needs of the pre-press industry in the new millennium. Luxel F-9000 takes full advantage of its patented acousto optic technology to deliver unprecedented productivity speed whilst still maintaining Fujifilm quality. With Luxel F-9000 working for you, productivity increases to exceed your customers' expectations.

Main features and functions

A safe investment

- Upgradeable on site to grow with your business

Speed, power & productivity

- Multi-laser technology for exceptional film speeds
- Built-in redundancy with 2 and 3-laser models for continued production operation
- Automatic punching produces plate-ready positive or negative film
- Deep tank technology for faster film processing

Quality of output & design

- High resolution output
- Advanced Fujifilm technology

Flexibility

- Choice of supporting RIPs to suit any application
- Maximum image size of 1122mm x 930mm
- Handles a variety of film widths from 559mm up to 1130mm
- Dual input cassettes, daylight loading and fully automatic media management

Easy to use, service & maintain

- Inverted C-drum reduces effects of stray particles and dust
- Maintenance-free spinner assembly bearings
- User-friendly, icon-driven, intuitive control interface

Reliability

- Designed for manufacture driving **out** complexity, designing **in** reliability
- In-line film acclimatisation area for optimum performance
- Gruelling test program
- Guaranteed Fujifilm quality

THE RESULT OF ADVANCED TECHNOLOGY

The Fujifilm Luxel F-9000 multi-laser imagesetter attains new levels of excellence in terms of high quality film production. Quite simply, it is the fastest, most technologically advanced B1 imagesetter available in the world today.

With an optics system that can be configured with one, two or three laser beams, the Luxel F-9000 offers the capability, in its three laser variant, of producing 2438 dpi B1 flats at the rate of two every three minutes.

HOURLY OUTPUT @ 2438 dpi	
1 LASER	16 B1s
2 LASERS	29 B1s
3 LASERS	38 B1s

Fujifilm's UK Manufacturing facility

Multi-laser technology and micro-engineering

What allows the F-9000 to output film at such astonishing speeds is its use of a true multi-laser system within an internal drum architecture – as opposed to the more common, but speed limited, multi-beam external drum systems. Fujifilm's research engineers achieved what was thought to be impossible: a combination of inspired thinking and leading-edge engineering produced an optical system that overcame the challenge of aligning multiple laser beams that reflect off a spinning mirror.

Forward thinking ...

A Controller Area Network (CAN) bus system has been implemented within the F-9000, a development based on the type of distributed communication systems found in prestigious motor vehicles, for example, Mercedes. This system gives "intelligence" to distributed modular parts of the F-9000 with many benefits in control, reliability and error management.

Reliability by design; excellence by pedigree

It took a 40-strong core development team a whole year to develop the F-9000 from an initial design concept into a rigorously tested manufactured product in an inspired joint effort between the UK and Japan. No stone was left unturned in the quest for technical excellence.

Performance is nothing without reliability

The major design goals were based around performance, productivity and reliability. The result is a truly advanced machine, not only in technology but also manufacturing terms.

With reliability very high on the list of priorities, Fujifilm's design engineers focused on driving out complexity by minimising the number of component parts. Fewer parts means less to go wrong and, with Fujifilm's dedication to build quality, assures a long, trouble-free working life.

LUXEL F-9000

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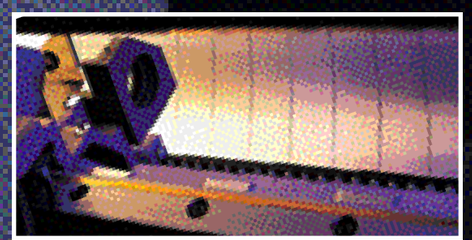
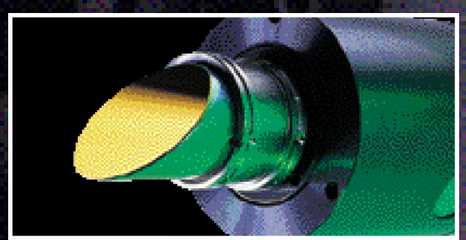
The world's fastest imagesetter

Three separate lasers give the F-9000 extraordinary imaging speed unmatched by any other imagesetter.



An etched, gold-plated encoder keeps precise track of the spinning mirror's position and maintenance-free bearings ensure smooth tracking.



At 30,000 rpm, the spinning mirror's bowed surface flattens to give perfectly spaced dots, even at 3657 dpi.

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THERE'S MORE TO F-9000 THAN MEETS THE EYE...

F-9000 upgrades keep pace with your business growth

Speed

Gain a competitive edge through increased speed: the F-9000 has been designed to produce film at an unprecedented rate. At a standard resolution of 2,438dpi, the single laser configuration has a production capability of 16 full size B1 flats per hour, the dual laser 29 and the triple laser an amazing 38 B1 flats every hour!

The F-9000 can image plate-ready film in all modes and can automatically punch the long edge of the film to ensure maximum registration accuracy, so saving time and money, and getting jobs to press more quickly.

Combined with a high speed film processor, output capacity is unrivalled. With the world's fastest B1 imagesetter at your disposal, you can take those "impossible" jobs in your stride.

Ease of use

Advanced technology, and its application to simplify machine operation, was also a design goal for the F-9000, resulting in an innovative menu-driven touch screen interface. The back-lit screen features icons and graphics for quick and easy machine operation and maintenance, and provides simple instructions for each operator task.

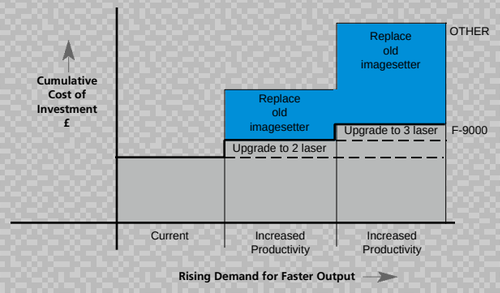
The inverted C-Drum design of the F-9000 (rather than a conventional "U"-shape) minimises dust build-up and contamination on the film: extraneous particles naturally drop clear of the imaging area.

In addition, any contamination on the spinner mirror is detected and automatically adjusted for. When cleaning is required, this is a simple user function.

The maintenance and serviceability of the F-9000 have also been designed with the future in mind – including the capability for remote tracking, maintenance and diagnostics of machine functionality.

LUXEL F-9000

A SAFE INVESTMENT



Obsolescence is built-out

When your production schedule demands it, the F-9000 will be able to keep pace since it can be upgraded to 2 or 3 laser status on site with minimal disruption to the working environment. This means that the requirement for increased productivity does not automatically mean a large capital outlay on new machinery.

Quality

High workload capacity has not been obtained at the expense of consistently high image quality. The F-9000 will image at all resolutions with a very sharp dot and precise fit.

To further ensure consistent image accuracy, an in-line acclimatisation area helps to mimimise film size variations that could be caused by temperature and humidity differences.

Add to this the peace of mind of Fujifilm's reputation for quality engineering and reliability, and the Fujifilm Luxel F-9000 makes even more business sense.

Reliability

Fujifilm's engineers designed the F-9000 from the ground up to be a workhorse able to cope easily with long shifts, day in and day out. Despite the use of advanced technology, the F-9000 has been designed for manufacture and achieves its remarkable performance using less than 2000 component parts (a typical B1 imagesetter may use up to twice as many), resulting in superb reliability.

The F-9000 has also undergone gruelling tests, both during development and production, to ensure it performs in demanding print and repro environments. These include X/Y vibration tests, temperature and humidity cycling and, remarkably, a 6 inch drop test after which, in order to pass, the machine is expected to function within specification.

The end result is a product of which Fujifilm are justifiably proud and confident.

Flexibility

The Luxel F-9000 has been designed to fit into existing production environments, with a choice of supporting RIPs and output resolutions.

The maximum imaging size is 1122mm x 930mm, with the capability of handling a variety of film widths from 559mm up to 1130mm, and the F-9000 can produce plate ready film for all popular press sizes with minimal film wastage in positive and negative mode.

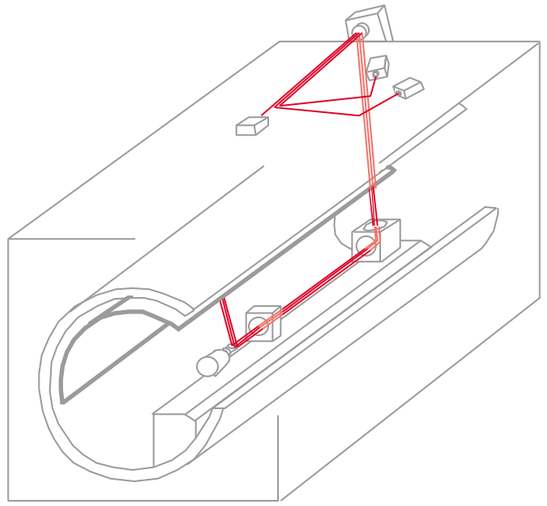
Dual input drop-in film cassettes make film loading fast and error-free with the option of using two different film sizes, or double the amount of one size, for longer film runs. A unique cassette database identifies different film sizes and types, including the amount of film remaining, for up to seven cassettes.

As floor space is often at a premium, the good news is that Fujifilm have managed to achieve a footprint of only 2.2m² for the imagesetter which, coupled with design features such as the counter balanced film cassette access door and direct, daylight film loading, means it uses up less working floorspace and is flexible enough to fit almost anywhere.

HOW IT WORKS

The F-9000 is the first imagesetter in the world to use multiple lasers to image film simultaneously.

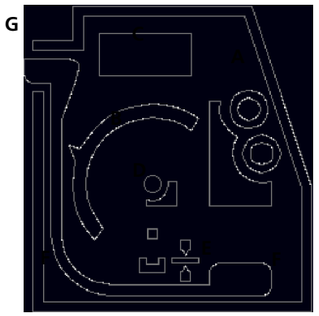
In order to create this breakthrough, Fujifilm's engineers had to overcome the problems of maintaining the integrity of two or more parallel laser beams when they are projected on to a spinning mirror in the centre of an imagesetter drum. Under normal circumstances, and without special processing, the laser beams would tend to 'tangle' as they reflected off the mirror.
The implementation of Fujifilm-patented AOD (Acousto Optic Deflector) technology keeps the lasers perfectly aligned by controlling the refractive index of elements in the lasers' paths.



The Luxel F-9000 has been designed to use the minimum of floorspace.

Film is loaded directly into either of the cassettes (A). Film feeds into the C-drum and is held in place by vacuum and punched ready for imaging (B). The laser beams exit from the optics section (C) are reflected through 180° by 2 stationary mirrors to the spinning mirror (D), which images the film. After exposure, the film is carried to the punch/guillotine assembly (E) then is guided under the drum into the film output path (F) and exits the imagesetter at (G) where it is taken into the AP-1250X, a fast, deep tank processor which has been specially developed for use with the F-9000.

G



The laser path

The laser sub assembly is located above the C-drum and contains one, two or three separate lasers: each laser is carefully aligned and calibrated. The beams pass through a series of lenses, mirrors and prisms and exit through the main lens/prism unit at the end of the laser sub assembly housing.

The beams are reflected twice to hit the spinning mirror, which travels the length of the drum's axis.

The spinning mirror is slightly bowed when stationary but G-forces at 30,000 rpm flatten it to present a perfect optical surface. Each beam hits the spinning mirror at a slightly different angle, which is part of the secret of its unique ability to image using multiple lasers.

The spinner carriage is mounted on a track which uses special maintenance-free bearings. Its location is precisely monitored using a reference strip whose top surface
is made of gold, finely etched with position markings.

LUXEL F-9000

F-9000's multi-laser sub assembly

The three lasers fire through a series of precision optical elements before the beams pass down to the imaging mirror inside the drum.

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SPECIFICATIONS

Technical Specification

Multiline Pro S deep tank processor

Performance

Format

- B1+
- Maximum media size: 1130mm x 930mm (44.5" x 36.6")
- Maximum imaging size: 1122mm x 930mm (44.1" x 36.6")
- Full size plate-ready film in positive and negative modes
- Media Widths: 559mm (22"); 768mm (30"); 1067mm (42"); 1130mm (44.5")
- Media Thickness: 0.1mm (0.004") and 0.18mm (0.007")
- Media Supply: Dual Input Cassettes; cassette database for up to 7 cassettes; drop-in daylight loading

Punching options

- Billows; standard and US Bacher; Stoesser; Kamata. Custom options available

Resolutions & imaging speed

Imaging speed shown in cm2/min (ins2/min)

Resolution	1 Laser	2 Laser	3 Laser (estimated)
48 l/mm (1219 dpi)	5813 (901)	11625 (1802)	17437 (2703)
72 l/mm (1828 dpi)	3875 (600)	7750 (1201)	11625 (1801)
96 l/mm (2438 dpi)	2907 (451)	5813 (901)	8719 (1351)
144 l/mm (3657 dpi)	N/A N/A	3875 (600)	5812 (900)

Technology

Imaging

Precision engineered internal inverted C-drum

Upgradeable advanced multi-laser technology

High speed spinner control

Fully automatic film handling and transport

Light sources

Red laser diode @ 635 nm wavelength

User interface

Innovative touch screen control panel

Software support

Choice of RIPs: Valiano ROOM, CelebraNT and HQ

Designed as an integral component of Fujifilm's Valiano workflow solution

RIP-recorder interface

Ultra wide SCSI

Processor

AP-1250X high speed deep tank processor

Media types

Red sensitive roll-fed

Fujifilm HQ – HXR film

Environment

Optimum performance range: 23°C ±2°; 55% RH ±5%

Operating tolerance: 18° - 29°C; 20 - 70% RH, non condensing

Footprint

Dimensions: 1400 x 2000 x 1100mm (hwd);
55 x 79 x 43" (hwd)

Weight: 840kg / 1848lbs (approx)

Deep Tank Processing

Luxel F-9000's on-line processor has been specially designed using new deep tank technology to process film at speeds that match its ultra fast imaging capabilities.

Fujifilm recommends the Multiline Pro S deep tank processor for the Luxel F-9000. The Multiline Pro S produces consistently high quality film output, including highly accurate temperature control, uniform transport speed and extra drying capacity to complement the inherent quality features of the Luxel F-9000.

As an operator, cost is always a major factor within the buying decision process. In-built economy features such as a double wash section, plumbless installation and anti oxidation covers makes the Multiline Pro S a great choice.

Its fast warm-up time, efficient dryer and electronic monitoring of uniform feeding speed means that not only is it one of the most flexible processors on the market, it is also one of the fastest.

Capacity

168 cm/mm (66") at 15 sec. dev. time.

Dry-to-Dry Time

61 sec. at 15 sec.dev.time

Materials

Rapid access film, imagesetting papers and film, hard dot film, repro film, daylight films, polyester plates (special kit required).

Material width

10 cm (4") – 125 cm (49")

Material length

20 cm (7.8") – 3 m (9.8 ft)

Material thickness

0.08 mm (0.003") – 0.30 mm (0.0012")

Developing time

10 sec. – 40 sec.

Tank Contents Fix

40 l (11 gal.)

Tank Contents

Washsection 1:15 l (4 gal.), washsection 2: 15 l (4 gal.)

Power consumption

Max. 7,000 Watt at 230 V

Weight (net)

Non crated: 225 kg (495 lbs)

Features

Developer filter, closed stand, rack drip tray, process management system, dual wash rack, timer auto start, service manual, spare part kit, installation parts kit and user manual.

Accessories

Drip tray below processor, rack hoist, plumbless water installation, multicycle water, multiclean air, charcoal filter, multialarm, replenish containers 2x301 on trolley, waste containers 2x30/1 on trolley, fume exhaust hose, two room installation kit and water panel (USA only).

aking the most of F-9000's speed and quality

The Luxel F-9000 is a class-leading product and as such deserves only the best. Fujifilm's HQ system consumables and the range of Fujifilm RIPs offer the total solution.

Fujifilm HQ System*

Combining the quality of manual film making with the efficiency of full-page laser output, the Fujifilm hard dot HQ System delivers consistent results, time after time. Especially developed to match the performance of the Luxel F-9000, HXR includes the following benefits:

- Extremely sharp dots and lines
- High D-max – a high density film image that ensures flawless transfer to the printing plate.
- Superior linearity – outstanding developing characteristics that require little or no linear correction of the recording equipment

Fujifilm RIPs

Fujifim's range of leading edge, high speed RIPs provide a choice of options to meet individual business needs – precisely.

CelebraNT Plus RIP*

Developed in conjunction with Adobe, CelebraNT is a genuine Adobe® PostScript® 3™ RIP with PDF capability.

Valiano ROOM RIP*

A Rip Once Output Many RIP available for use with the Luxel F-9000.

VALIANO

HQ RIP*

A proven RIP based on the Harlequin® ScriptWorks® technology. It's fully featured and remarkably easy to set-up and operate.

* Refer to separate specification sheets for further details